

Remarks

Reconsideration and allowance are requested in view of the above amendments and the remarks below. These amendments are being made to facilitate early allowance of the presently claimed subject matter. Applicant does not acquiesce in the correctness of the objections and rejections and reserve the right to pursue the full scope of the subject matter of the original claims in a subsequent patent application that claims priority to the instant application.

Claims 1, 2, and 5-11 are rejected under 35 U.S.C. 102(b) over Patent Abstracts of Japan publication no. 59007715, hereafter "Japanese Abstract." Claims 3 and 4 are rejected under 35 U.S.C. 103(a) over the Japanese Abstract and Wendel et al. (4,424,773), hereafter "Wendel." These rejections are defective because the Japanese Abstract and Wendel, alone or in combination, fail to disclose each and every feature set forth in the claims.

Applicant submits that the Japanese Abstract does not disclose a freewheel.

A freewheel is a defined mechanical part, namely a directional coupling. This means that a freewheel provides a coupled state in one direction of rotation, whereas in the opposite direction of rotation the freewheel is in an un-coupled state. A change or shift from the coupled state to the un-coupled state and vice versa is achieved only by a change of the direction of rotation. It is characterizing for a freewheel that no axial movement is necessary for coupling and de-coupling.

In the Japanese Abstract, the arrangement of the balls 9 and the ball race 6 has also the function of a coupling between the cover 5 and the base body 8, but this arrangement is not a freewheel. Fig. 1 of this Japanese reference shows the coupling with the balls 9 and the ball race 6 in the de-coupled state, in which the cover 5 is rotatable against the base body 8. However, in this de-coupled state the cover 5 can freely rotate around the center axis in both directions, clockwise or anti-clockwise. This is a first difference against a clearly defined freewheel.

For coupling of cover 5 with base body 8 - this means providing a fixed connection between cover 5 and base body 8 - cover 5 has to be axially moved to base body 8. By this axial movement the balls 9 are pressed into the tapered grooves A. This intermediate state is shown in fig. 4 of the Japanese Abstract. When the balls are pressed to the deepest point of the tapered grooves A, cover 5 is in direct contact with the ball race 6 and thereby clamping cover 5, ball race 6, ring 7 and base body 8 together providing a fixed connection between cover 5 and base body 8. The coupling has now reached the coupled state, in which a further rotation between cover 5 and base body 8 is not possible. Also in this coupled state, cover 5 and base body 8 are fixed together in both directions of rotation.

As a result, the arrangement shown in the Japanese Abstract is not a directional coupling as a freewheel, but an axial coupling which needs an axial movement or shift for coupling or de-coupling.

It is noted that the coupling arrangement as disclosed in the Japanese Abstract is combined with the generating of a small rotation during the axial coupling movement. Such a well-known arrangement is cited in the introductory part of the application on page 1, last paragraph to page 2, first paragraph of the application.

As it is explained on page 2, second paragraph of the application, the service live of such known valve rotating devices is limited, as a considerable wear is caused by the axial forces both on the balls, and on the ball races.

In Wendel, a directional coupling 22 is shown in figs. 1, 2 and 4. However, this uni-directional coupling provides a coupling between the cylinder head 7 of an engine and a helical coil spring 2 of the valve wherein the spring is arranged on the top of the uni-directional coupling 22.

As a result, Wendel does not disclose or teach an annular disk-shaped freewheel, at whose inner annular face at least one coupling

member is arranged and in operative connection with the outside of the sleeve-shaped part of a basic body.

Furthermore, Wendel does not disclose or teach the specific compact design of a valve rotated device, in which the annular disk-shaped freewheel and an axial spring device – which is not the helical spring of the valve – are enclosed in an annular space formed by the basic body and the cup-shaped cover. This arrangement of the freewheel is not only compact but also provides protection against dust or other negative influences from the environment.

Accordingly, since the Japanese Abstract and Wendel, alone or in combination, fail to disclose each and every feature of independent claim 12 as required by 35 U.S.C. 102(b) and 35 U.S.C. 103(a), Applicant respectfully submits that independent claim 12 and its corresponding dependent claims are allowable.

If the Examiner believes that anything further is necessary to place the application in condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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